The College of Basic Sciences e-Newsletter is published six times yearly and is distributed to all faculty and staff in the College of Basic Sciences and to a larger subscription list of administrators, alumni, and friends of the college.

If you know someone who should be receiving the e-Newsletter and is not, please send their contact information and e-mail address using the link below. Articles and ideas for the e-Newsletter should be sent to bascdean@lsu.edu. Please include hyperlinks when possible.

Thanks to all who provide the items for this newsletter.

NEWSLINKS
The URLs listed below are direct links to the various news pages or newsletters within the College and departments. News highlights also appear on the college’s Home Page and you can visit our departmental pages:

- Biological Sciences
- Chemistry
- Computer Science
- Geology & Geophysics
- Physics & Astronomy
- Museum of Natural Sciences

The Calendar of Events is on the last page for this issue.

NOTES FROM 338
Dear colleagues,

Our September newsletter was completed on August 29th with planned distribution on Tuesday September 2nd. Additionally, we planned to launch the new College of Basic Sciences website. Gustav had other ideas. However, it launches in the afternoon Thursday, September 11th.

As we dust and dry ourselves off and get back to the business of research and teaching, we do so knowing that many friends and colleagues have suffered enormously in the wake of Gustav. A large number of faculty and students are still without power to their homes, and several others have suffered significant damage to their homes. On behalf of the entire College of Basic Sciences family, I extend my sincere wishes for better days ahead.

Here on campus we are still in the process of assessing damage, but it appears that we avoided significant damage to our buildings and facilities. Our major challenge was from the extended loss of power, which jeopardized samples and reagents stored in freezers and refrigerators. While some significant losses have been reported, and a few disasters were narrowly avoided, it appears that collectively made it through with minimal losses. We will be working closely with department chairs to learn from our Gustav experience.

Although we are in the midst of many challenges, this newsletter provides an opportunity to highlight many examples of exciting developments in the college that have occurred over the summer; more good things are on the horizon.

The Louisiana legislature approved an additional $10.4M in funding for the Choppin Annex, which will allow us to add two more floors to the building (it is currently slated to have 5-stories). This additional funding will only allow us to “shell out” the two extra floors, and we are in the process of seeking approximately $6M more to complete the construction. The two additional floors were funded by the legislature to support LSU’s emerging program in materials science. Accordingly, we are pursuing plans in which the first floor of the building will be designated as a materials-characterization facility with a particular emphasis on microscopy. The second additional floor will consist of laboratories and offices that support interdisciplinary materials-science research. The remaining three floors will be devoted to labs and offices for Chemistry, as originally planned. The current speculation is that construction will begin late in the spring of 2009. We’ll be in contact with Parking regarding...
accommodations for those of us who park in the LSA/Choppin lot.

Also associated with the materials-science initiative, the Office of Research and Economic Development provided approximately $800k to renovate several research labs in Choppin Hall. These renovations are underway and should be completed this fall.

Pay raises have been implemented and were approved in the August 28th Board of Supervisors meeting. Both faculty and staff received raises, which averaged 4%. Foundations of Excellence departments (including Biological Sciences, Chemistry, and Physics & Astronomy) received an additional 1% allocation, which were used to enhance operating budgets and for additional salary enhancements.

Beginning Fall 2009, we will launch the College of Basic Science Residential College (BSRC), which will be located in historic Evangeline Hall and house approximately 230 entering freshmen who have declared a major within the College of Basic Sciences. Associate Dean Gary Byerly has taken the lead on this initiative and has formed an advisory group with representatives from each department within the College; this advisory group and representatives from Residential Life are working to determine the particulars of how the BSRC will function. For now, we have determined that all residents will be required to have a minimum ACT of 23 and participate in a pre-academic-year “boot camp” (e.g., BIOS). Although Biological Sciences majors will almost certainly comprise a significant majority of the residents, our goal is to have strong representation from all majors in the college. I am very pleased to know that we will be able to offer this progressive living and learning environment to many of our students. In addition to unique class offerings, students will have access to tutoring and advising within the dorm. The BSRC will also represent an excellent opportunity for students to interact with faculty and alumni through evening lectures and informal gatherings. Please contact Dr. Byerly if you are interested in learning more about the BSRC or would like to get involved with its development.

Finally, I am (mostly) pleased to announce that we have received approval from Academic Affairs to move the College of Basic Sciences offices to the first floor of Hatcher Hall. BASC deans and staff met with Facility Services in mid August to discuss preliminary plans for timing and how the space will be renovated. Unfortunately, because of all the “dominoes” that must fall to make this happen, it may be 2 years or more before we can actually move; that said, we are working on alternative strategies that would accelerate this timeline.

Best wishes for a great year.

Cheers, Kevin C.

KUDOS

Huiming Bao (Geology & Geophysics), with colleagues from UCLA and China, recently discovered some of the first atmospheric evidence in support of the “Snowball Earth” hypothesis. This theory suggests that Earth was entirely covered by ice during the Cryogenian period, which took place from about 790 to 630 million years ago. Their findings were reported in the Letters section of the scientific journal Nature 453, 504-506 (22 May 2008).

Mark Batzer (Biological Sciences) has been designated as the first recipient of the Dr. Mary Lou Applewhite Distinguished Professorship. In their August 28 meeting, the LSU Board of Supervisors also approved the promotion of Mark to the rank of Boyd Professor.

Jeff Blackmon (Physics & Astronomy) and colleagues from LSU and Florida State University are collaborating to develop the Array for Nuclear Astrophysics Studies with Exotic Nuclei (ANASEN). ANASEN combines three different types of detectors to achieve an efficient and selective instrument for studies of nuclear reactions induced by low-intensity beams of exotic nuclei. The project provides valuable hands-on research experience for students in forefront instrumentation and techniques that are important for various fields from health care to national security.

Julia Chan (Chemistry) was awarded the 2008 Iota Sigma Pi Agnes Fay Morgan Research Award for research excellence in chemistry or biochemistry.

Brent Christner (Biological Sciences) was interviewed by CBS regarding his research on ice nucleators and his interview was incorporated into a video short that was used on CBS Sunday Morning.
Research by **Barry Dellinger** (Patrick Taylor Chair of Hazardous Waste, Chemistry) on the similarity between the hazardous effects of airborne pollutants and those found in cigarette smoke has generated more than 2,000+ articles in local and worldwide press.

**John Gibbons, Jr.** has been elected Secretary of the **American Association of Physicists in Medicine**. He is chief of clinical physics at Mary Bird Perkins Cancer Center and adjunct associate professor in the Department of Physics and Astronomy.

**Evanna Gleason** (Biological Sciences) served as a panelist for the 2008 National Science Foundation Graduate Research Fellowship Program. Based on the reviews and recommendations of the panel, more than 900 students were selected to receive graduate fellowships.

**Mark Hafner** (DeSoto Parish Alumni Chapter Alumni Professor of Biology Sciences and curator of mammals at the LSU Museum of Natural Science) was recently awarded the 2008 Donald W. Tinkle Research Excellence Award by the Southwestern Association of Naturalists.

The award is presented to a scientist who has made a significant contribution to the knowledge and understanding of the biota of the southwestern United States, Mexico and Central America through scientific articles and books over the last 10 years.

**S. S. Iyengar** (R.P. Daniels Professor & chair of Computer Science) gave a keynote lecture titled “A New Class of Computation for Distributed Sensor Networks” at the **International Conference on Contemporary Computing** in New Delhi, India. Iyengar also gave a keynote lecture titled “Terrain Coverage and Feature Extraction Using Sensor Networks” in June at the **IEEE International Conference on Sensor Networks, Ubiquitous and Computing** SUTC-2008—Taichung, Taiwan.

**Gary King** (Biological Sciences) was featured in an article titled “Out of Thin Air” in Science 20 June 2008: Vol. 320. No. 5883, pp. 1582 - 1583, for his work with microbes in Kilauea. A team of researchers, including **Luis Lehner** (Physics & Astronomy) from LSU and Eric Hirschmann, David Neilsen, and Matthew Andersen (the latter two are former LSU postdocs) from BYU, studying the collision of stars has calculated the effect of such a collision and the generation of gravity waves. The research is relevant to efforts to detect gravity waves with LIGO, made heavy use of LONI and other LSU computational facilities, and is a direct consequence of a $2 million US grant awarded by NSF in 2003.

**John P. O’Neill**, former director of the LSU Museum of Natural Science and current research associate at the museum received a Distinguished Service Merit Award from Peruvian President Alan Garcia Pérez in June. The Peruvian Minister of Foreign Affairs, José Antonio García Belaúnde, presented the award at a ceremony in Lima, Peru.

**Brad Schaefer** (Physics & Astronomy) was featured in New Scientist for the discovery that old photos of Pluto revealed the evidence of frost evaporating on the surface.

**Ed Seidel** (Floating Point Chair of Physics/Director of CCT) was named the head of the National Science Foundation’s Office of Cyber infrastructure in September. He was interviewed in the Chronicle of Higher Education in July.

**Kevin Smith** (LSU Foundation James C. Bolton Professor of Chemistry) has been named the winner of the American Chemical Society’s Alfred Bader Award in Bioinorganic & Bioorganic Chemistry for 2009.

**Jackie Stephens** (Biological Sciences) has been designated as the first recipient of the Ron and Mary Neal Distinguished Professorship.

**Thomas Sterling** (Seola Arnaud & Richard Vernon Edwards Jr. Professor of Computer Science/CCT) gave an invited presentation to the Intel Division in Argentina entitled “A Scalable Execution Model for the Logical Integration of Ensembles of Cores,” which described the research at LSU being performed on the ParalleX execution model. Sterling also gave an invited one-week course at the University of Buenos Aires as part of its annual ECI conference entitled: “Practical High Performance Computing for...
The modern age.” **Dylan Stark**, an undergraduate student in computer science invited to participate in the conference, conducted the recitations.

In his July 31, 2008 testimony before the US House of Representatives Committee on Science and Technology, Craig Stewart (Chair of the Coalition for Academic Scientific Computing) highlighted **Thomas Sterling**’s (Computer Science/CCT) innovative use of “tele-collaboration” in teaching high-performance computing to students at the University of Arkansas and Louisiana Tech.

---

## MARQUEE PUBLICATIONS

Three papers by the theoretical and experimental gravity group in the Department of Physics & Astronomy were highlighted by the editorial board of the journal *Classical and Quantum Gravity.* [1] In “Rotating collapse of stellar iron cores in general relativity” (*Class. Quantum Grav.* 24, S139 2007), **B. Zink, E. Schnetter**; and. [2] In “Late-time tails in the Kerr spacetime” (*Class. Quantum Grav.* 25, 072001, 2008), Jorge Pullin and colleagues. [3] In “Search for gravitational-wave bursts in LIGO data from the fourth science run” (*Class. Quantum Grav.* 24, 5343, 2007), the LIGO Science Collaboration (including **R. Amin, L. Blackburn, J. Giaime, G. Gonzalez, C. Hanna, W. Johnson, A. Rodriguez, J. Slutsky,** and **M. Sung** at LSU).

Researchers from the Museum of Natural Science, including **Ben Marks** (PhD, Zoology, 2008) and Museum director **Dr. Fred Sheldon**, along with several other institutions took part in an extensive project studying the evolutionary history of birds – a project so large and so comprehensive that textbooks will be rewritten in its wake. The paper, “A Phylogenomic Study of Birds Reveals Their Evolutionary History,” was published in *Science 27 June 2008: Vol. 320. No. 5884, pp. 1763 - 1768.*

---

## NEW GRANT FUNDING NOTICES

### BIOLOGICAL SCIENCES


---

By replacing a few percent of iron atoms with manganese in the semiconductor ferrosilicon (FeSi), **John DiTusa**, (Physics & Astronomy) former student Ncholu Manyala, and colleagues have demonstrated a possible method for systematically inducing non-Landau Fermi liquid behavior in doped semiconductors. The paper is titled “Doping a semiconductor to create an unconventional metal,” *Nature 454, 976, (21 August 2008).*


Chemistry

David Spivak, “Protein Detection by Proximity Immobilization of Aptamers and Antibodies,” Board of Regents, May 2008 through April 2009, $10,000.

Computer Science

Geology & Geophysics
Huiming Bao, “Experimental Sulfate-Triple Oxygen Isotope Geochemistry,” American Chemical Society, July 2008 through June 2011, $100,000.

Museum of Natural Science

Physics & Astronomy


Ilya Vekhter, “Inhomogenous disordered Dirac fermions: from heavy fermion superconductors to graphene,” Department of Energy, July 2008 through June 2011, $411,891. This is part of a $5.2 million grant from the Department of Energy that is a Federal/State partnership aimed at advancing basic research.

Program News
BIOS, the “biology boot camp” for entering freshmen, took place on campus August 10-15. The Pearson Foundation, a part of Pearson Publishing, includes among its community service a program to help students in K-12 to express themselves with video media. Through this trial, Pearson intends to expand to the college level. Twenty students were equipped with video cameras to document their experience. Then the Pearson team of professionals worked with those students the following week to polish their products. The Departments of Physics & Astronomy (PHIOS) and Computer Science (CIOS) both conducted their first pre-freshmen “boot camps” in August.

The Scope-on-a-Rope program is not only alive and well, it’s had a rebirth! LSU’s lending program is still active, so you can continue to borrow scopes from program coordinator Adrienne Lopez, but if you have been waiting to acquire one of your very own, the new kits can be purchased exclusively from School Technology Resources.
WELCOME TO NEW FACULTY

(BIOLOGICAL SCIENCES)

Prosanta Chakrabarty
Assistant Professor
Ichthyology
University of Michigan 2006
Postdoc, American Museum of Natural History

Bret Elder
Assistant Professor
Quantitative Ecology
UC Santa Cruz 2002
Postdoc, University of Chicago

Rui Lu
Assistant Professor
Molecular Virology
Sainsbury Lab, John Innes Centre, UK 2002
Postdoc, UC Riverside

Aaron Smith
Assistant Professor
Plant Genetics
Purdue University 2003
Postdoc, University of Georgia

CHEMISTRY

Megan Macnaughtan
Assistant Professor
Biophysical Chemistry
Purdue University 2003
Postdoc, University of Georgia

John Pojman
Professor
Polymer Chemistry
University of Austin 1988
Professor, University of Southern Mississippi

COMPUTER SCIENCE

Zian Zhang
Assistant Professor
Machine Learning
Yale University 2005
Research Scientist, SRI International
Postdoc, Stanford University

GEOLOGY & GEOPHYSICS

Sophie Warny-Bart
Assistant Professor
Palynology
Catholic Univ of Louvain-la-Neuve, Belgium 1999
Asst Prof-Research (GEOL)/Ed & Outreach Director (MNS), LSU

A. Alexander G. Webb
Assistant Professor
Structural Geology
UCLA 2007
Postdoc UCLA

PHYSICS & ASTRONOMY

Mark Jarrell
Professor
Material Science and Computational Science
UC Santa Barbara 1987
Professor, University of Cincinnati

(starts Jan. 2009)

Juana Moreno
Assistant Professor
Material Science
Rutgers University 1997
Assistant Professor, University of North Dakota

Shane Stadler
Associate Professor
Experimental Condensed Matter
Tulane University 1998
Assistant Professor, Southern Illinois University

PATENTS


COMINGS AND GOINGS

Richard Kurtz (Physics & Astronomy) assumed the position of Associate Dean for Research in the College as of July 1, 2008. Fred Rainey, who served in that capacity for 4 years, has returned to his teaching and research program in Biological Sciences.

Jeff Nunn has assumed the duties of Interim Chair in Geology & Geophysics. Former department chair Louis Thibodeaux has graciously agreed to continue serving as chair of the department chair search committee. Two candidates for the department chair are scheduled for interviews in September.
Josh Fordyce joined the Department of Chemistry as the Graduate Records Coordinator after ten years in the US Navy as a cryptologic technician.

Krista Haertle and Spencer Drury joined the Basic Sciences Office of Alumni & Donor Relations as graduate assistants. Both are students in the MBA program at LSU and will be assisting the staff with fundraising, communications, and college advancement.

Greg O’Dell (Chemistry) received his degree in International Studies in May. Greg has been an intern with the computer management team in the Chemistry department while completing his degree and has since joined the administrative staff ranks.

Julie Tessier Cooper left the BASC Office of Alumni & Donor Relations. She and her husband relocated to Durango, Colorado. Julie has been a valuable team member and we will miss her greatly.

David Trammel joined the Department of Computer Science as Systems Manager.

DEVELOPMENT & FUNDRAISING UPDATE

CenterPoint Energy of Houston donated $5,000 to the Dr. William A. Pryor Professorships in Chemistry as a match to the professorship by Mark Schroeder, Vice President and General Counsel for CenterPoint’s pipeline group. CenterPoint serves over 250,000 Louisiana customers through its gas distribution businesses in southwest and northwest Louisiana.

LSU alumni, their families and friends joined Mrs. Frances Barney, wife of Charles Barney who has pledged $4.75 million in funds to endow the Field Camp, for the ribbon cutting on the newly constructed dining hall at the LSU Geology Field Camp near Colorado Springs. The Geology Field Camp Campaign began in 2000 with alumni Frank Harrison, Jr. and Billy Tidwell (Class of 1950) serving as co-chairs. Harrison was the first donor to the dining hall project. Twenty three donors including Charles Barney, A. C. Winslow, Sugar Woods, Dolphe Gueymard, Stewart Henry, Robey Clark, and Billy Harrison contributed more than $400,000 to erect the new dining structure. In addition to the dedication, LSU Geology and Petroleum Engineering alumni celebrated the 80th anniversary of the field camp.

The LSU Foundation has received many gifts in memory of William L. “Billy” Tidwell who passed away in July. Billy was a fierce advocate for the Department of Geology & Geophysics, the College of Basic Sciences, and LSU in general. He and his family are directly responsible for many fundraising efforts that have benefitted LSU over the years, including co-chairing the Field Camp Campaign Committee, creation of several professorships in geology, and organizing the Annual Texas Tigers Golf Tournament to provide undergraduate scholarships. Our thanks to everyone who provided gifts in memory of Billy.

Shell Oil Company donated $10,000 for Applied Depositional Geosystems and $25,000 for the Shell Undergraduate Recruitment and Geoscience Education (SURGE) program in the Department of Geology & Geophysics.

STUDENT NEWS

Chantal SanMiguel (Biological Sciences), a student researcher in the lab of Vince LiCata, received a $25,000 Rotary Club scholarship which will allow her to spend a year living in France after she graduates from LSU where she will take university classes, work in a yet to be determined research lab, and will serve as an “International Ambassador” for the Rotary Club by speaking at Rotary Club and related meetings.

Jennifer Andrews (PhD candidate, Physics & Astronomy) has been awarded a NASA Graduate Student Researchers Program (GSRP) Fellowship for her thesis research on “A Multi-Wavelength Study of Dust Production in Type II Supernovae.” She has also been successful in applying for observing time on the Hubble Space Telescope, Spitzer Space Telescope, and at the Gemini Observatory.

Demetra Kandalepas was awarded the Carrie Lynn Yoder Memorial Fellowship at a ceremony in
August. Demetra studies endophytic fungi in the lab of Bill Platt (Biological Sciences) and is the second recipient of the fellowship. The ceremony was held during the afternoon of summer commencement in which a posthumous doctorate was awarded to Carrie Lynn Yoder and accepted by her parents Lynda and David Yoder of Tampa, Florida.

Eighteen students studying marine biology traveled to southeast Alaska for a summer course taught by Bill Stickle (Biological Sciences). The students earned credit while studying the marine fauna and flora of the Juneau region during field trips and received lectures from Stickle as well as faculty from the Division of Fisheries of the University of Alaska, scientists at the Auke Bay National Marine Fisheries Service Laboratory at Lena Point and the director of the Alaska State Museum. One highlight included a quick ocean swim at the beach in the water that measured 44ºF.

FYI
Dean John Hamilton of the Manship School of Mass Communication will present a lecture entitled “Why Journalists Do What They Do” on October 15th at 3:30 pm in Life Sciences Annex Bldg A101. Jack is an engaging – indeed nationally renowned – speaker. This should be a great opportunity to help us understand and more effectively interact with journalists.

ALUMNI NEWS UPDATES

Jack Cheng (BS, CSC, 2004; MS, ISDS 2006) is employed by Chevron and was named one of Fortune Magazine’s Faces of the Future.

Tommy Stryjewski (BS, Biological Sciences, 2007) has entered medical school at Harvard University.

Anshul Tandon of New Delhi, India, received the University Medal at LSU’s August 8th commencement ceremony and the LSU Distinguished Communicator Award, believed to be the first of its kind in the nation. He earned this honor by meeting high standards set by faculty in various colleges and by the LSU Communication across the Curriculum, or CxC, program. Tandon earned high grade-point averages in communication-intensive courses – based on written, spoken, visual and technological communication – and built a digital portfolio, displayed as a public Web site that includes communication projects from courses, internships, leadership roles and public service. Tandon received his degree with a double major in computer engineering and computer science and has accepted a position at Google.

Nick Van Meter (BS, Physics, 2008) is pursuing his PhD at Harvard University.

Jeffrey P. Youngblood, (BS, Chemistry, 1996), was a Guest Editor of the August 2008 issue of the Materials Research Society Bulletin. Youngblood is an assistant professor of materials engineering at Purdue.

CALENDAR OF EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 23</td>
<td>Retired Faculty Luncheon Lod Cook</td>
<td>11:30 a.m.</td>
</tr>
<tr>
<td>September 24</td>
<td>Faculty Convocation E130 Howe Russell</td>
<td>2:30 p.m.</td>
</tr>
<tr>
<td>September 26</td>
<td>Fall Fest, LSU Quadrangle</td>
<td>11:00 a.m.-1:00 p.m.</td>
</tr>
<tr>
<td>October 20</td>
<td>Sabbatical Packets due in Dean’s Office</td>
<td></td>
</tr>
<tr>
<td>October 20</td>
<td>P&amp;T Sample Packets due in Dean’s Office for review</td>
<td></td>
</tr>
<tr>
<td>October 31</td>
<td>P&amp;T Packets due in Dean’s Office</td>
<td>(original + 21 copies)</td>
</tr>
<tr>
<td>November 5</td>
<td>Professorship Awards Reception, Faculty Club</td>
<td>4:30 p.m.</td>
</tr>
<tr>
<td>November 27-28</td>
<td>Thanksgiving Holiday</td>
<td></td>
</tr>
<tr>
<td>December 3-7</td>
<td>Concentrated Study Period</td>
<td></td>
</tr>
<tr>
<td>December 6</td>
<td>Classes end</td>
<td></td>
</tr>
<tr>
<td>December 8 - 13</td>
<td>Final Exam Period</td>
<td></td>
</tr>
<tr>
<td>December 19</td>
<td>Commencement</td>
<td></td>
</tr>
</tbody>
</table>